

Fig. 1

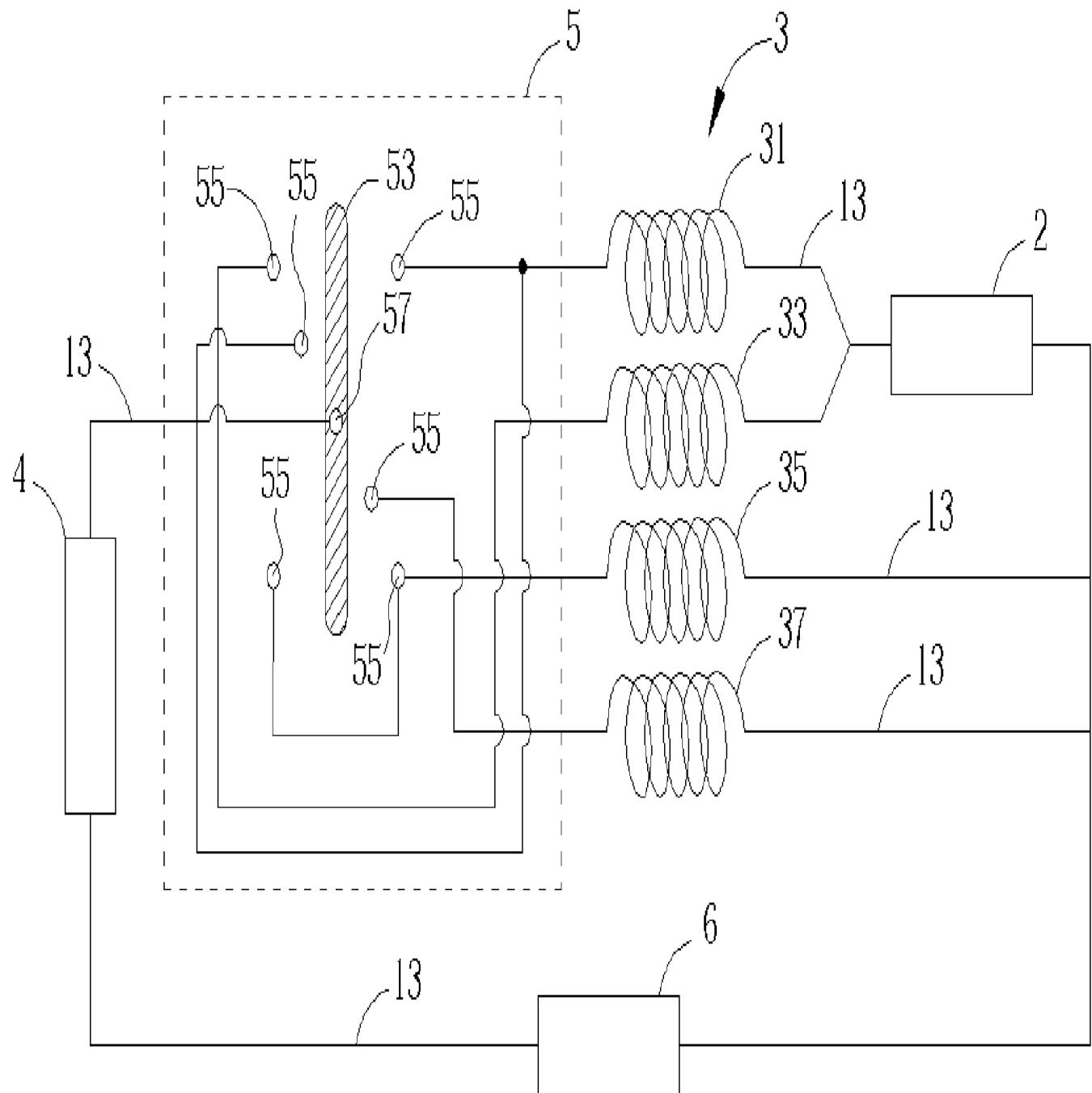


Fig. 2

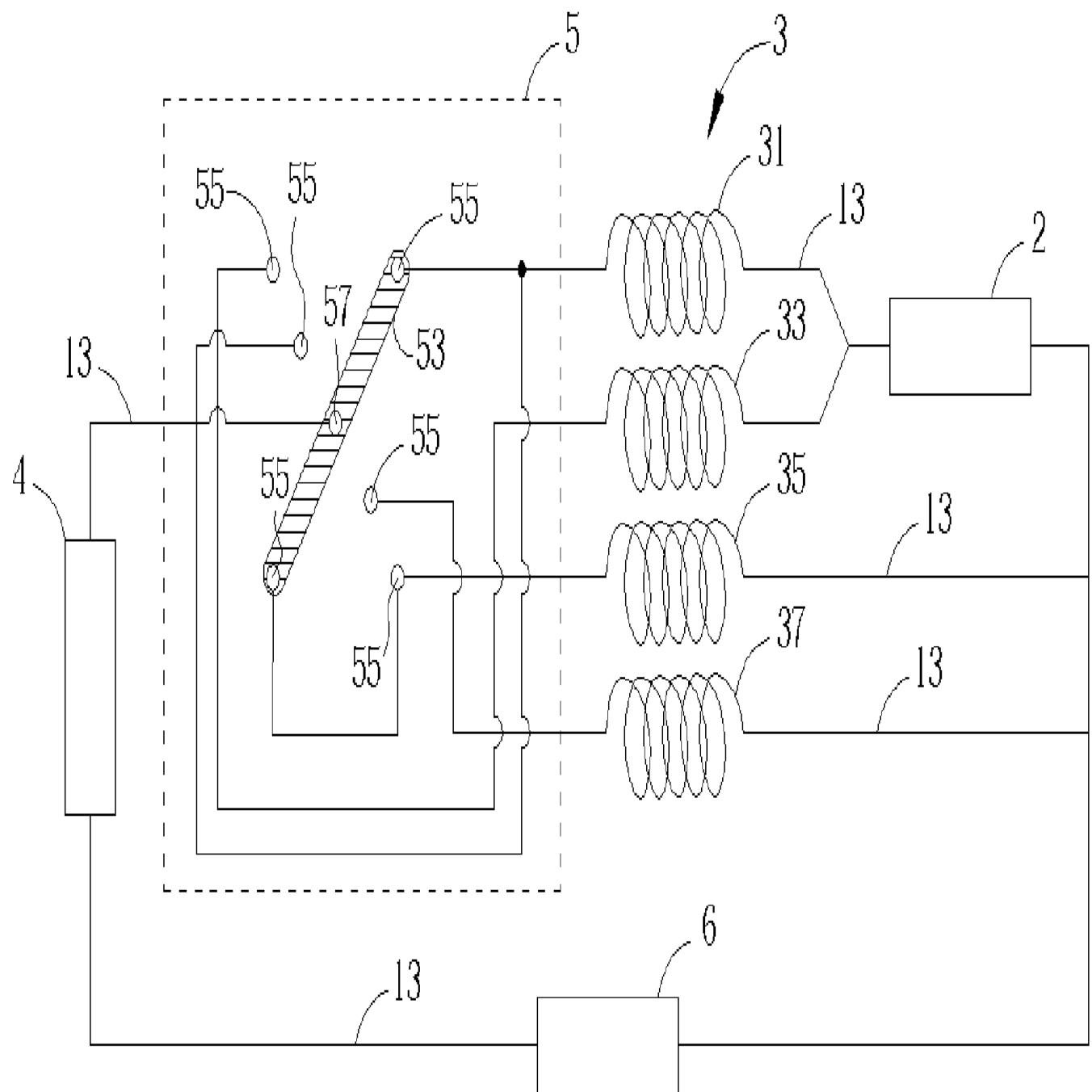


Fig. 3

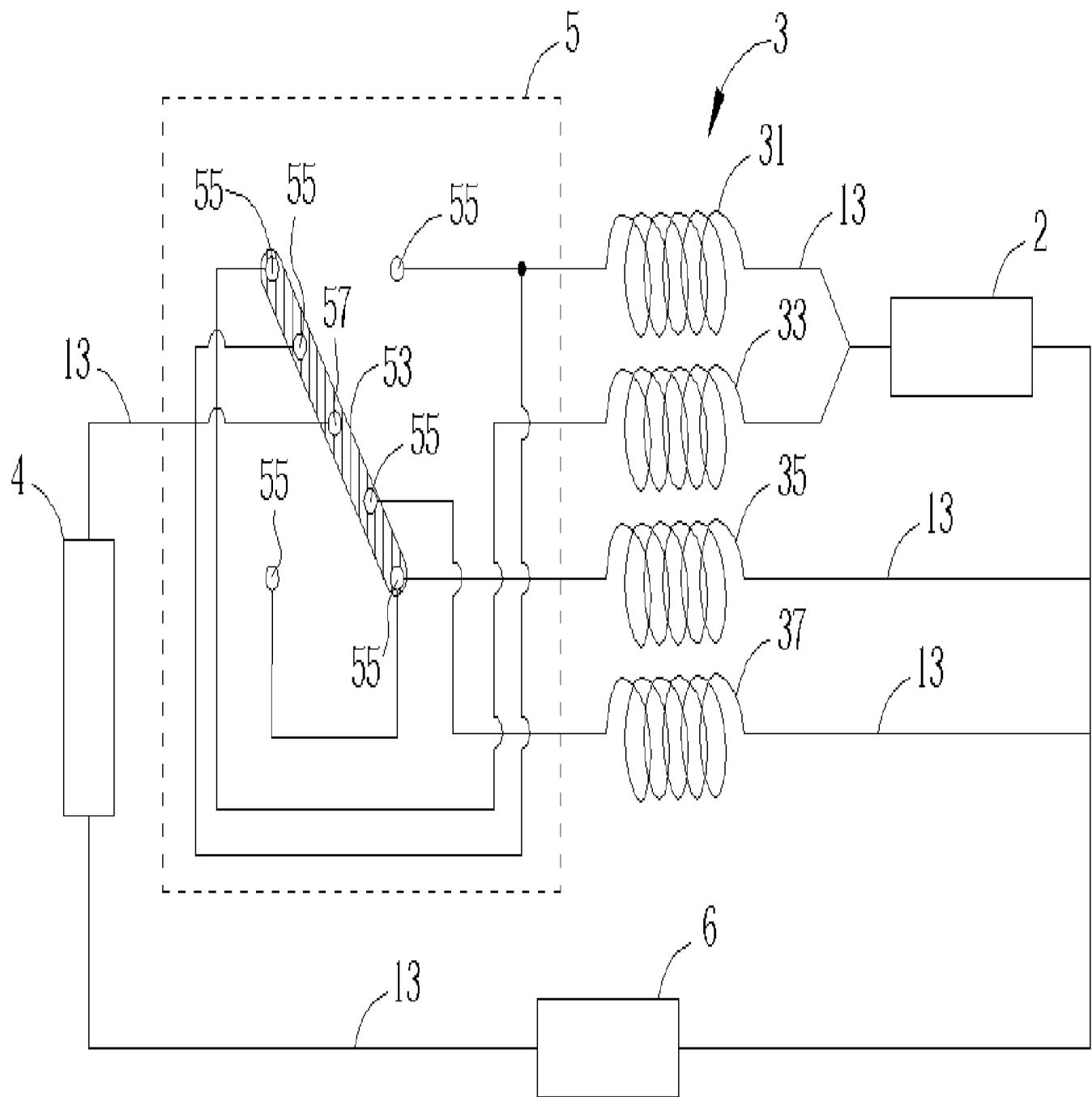


Fig. 4

| Type I          |                |                |                |                |        |
|-----------------|----------------|----------------|----------------|----------------|--------|
| ( I -1)         | R <sub>M</sub> | R <sub>1</sub> | R <sub>3</sub> |                | Total  |
| Resistance Ω =  | 4.00           | 4.00           | 1.00           |                | 0.89   |
| Current DC I =  | 2.00           | 2.00           | 16.00          |                | 18.00  |
| Voltage DC V =  | 8.00           | 8.00           | 16.00          |                | 16.00  |
| Power DC W =    | 16.00          | 16.00          | 256.00         |                | 288.00 |
| ( I -2)         | R <sub>M</sub> | R <sub>1</sub> | R <sub>2</sub> | R <sub>3</sub> | Total  |
| Resistance Ω' = | 4.00           | 4.00           | 2.86           | 1.00           | 1.00   |
| Current DC I' = | 2.82           | 1.18           | 1.64           | 16.00          | 16.00  |
| Voltage DC V' = | 11.29          | 4.71           | 4.71           | 16.00          | 16.00  |
| Power DC W' =   | 32.00          | 5.55           | 7.76           | 256.00         | 256.00 |

|   |
|---|
| W' <sub>M</sub> /W <sub>M</sub> =32.00/16.00=2              |
| W' <sub>Total</sub> /W <sub>Total</sub> =557.31/288.00=1.94 |

Fig. 5

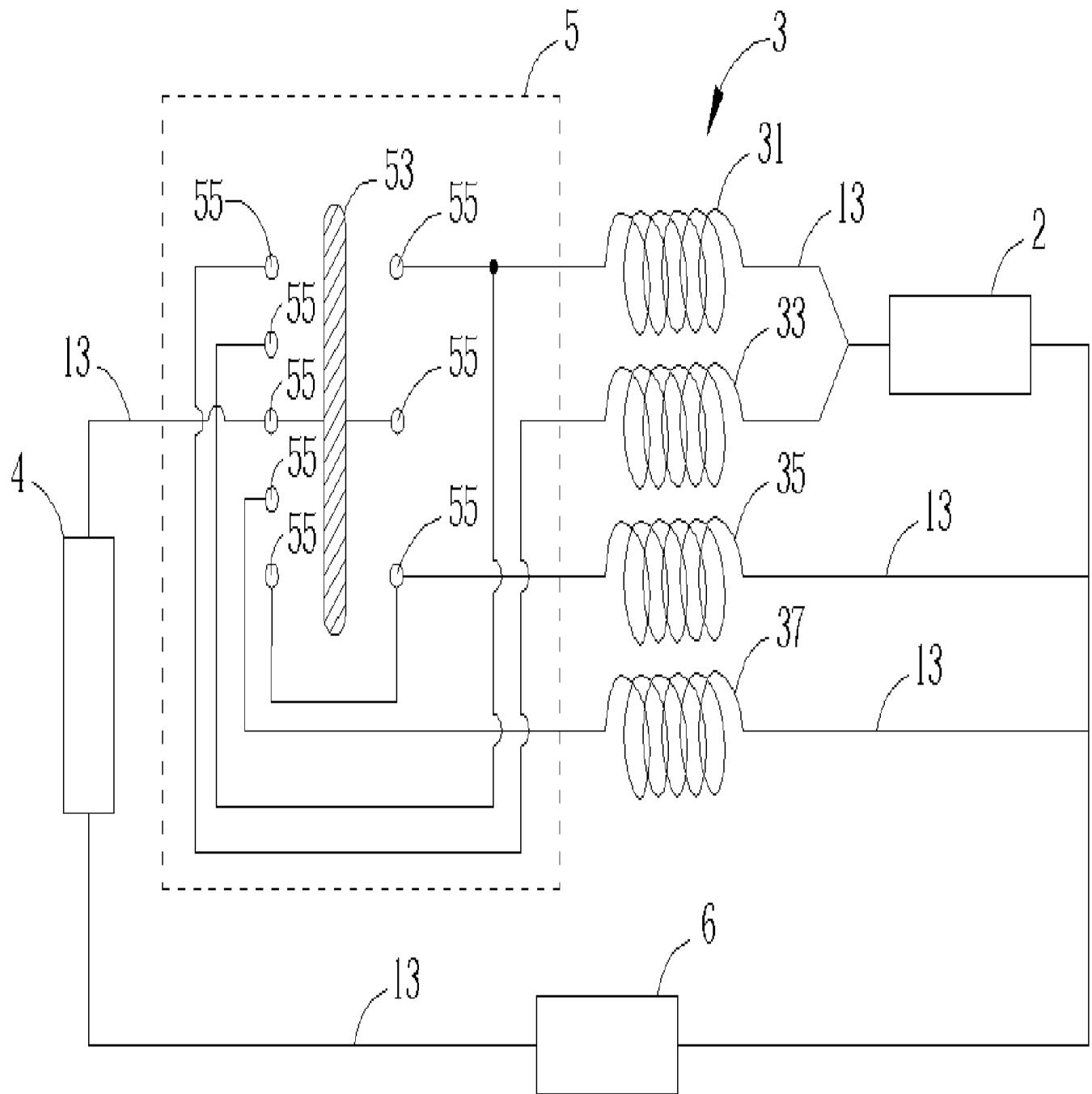


Fig. 6

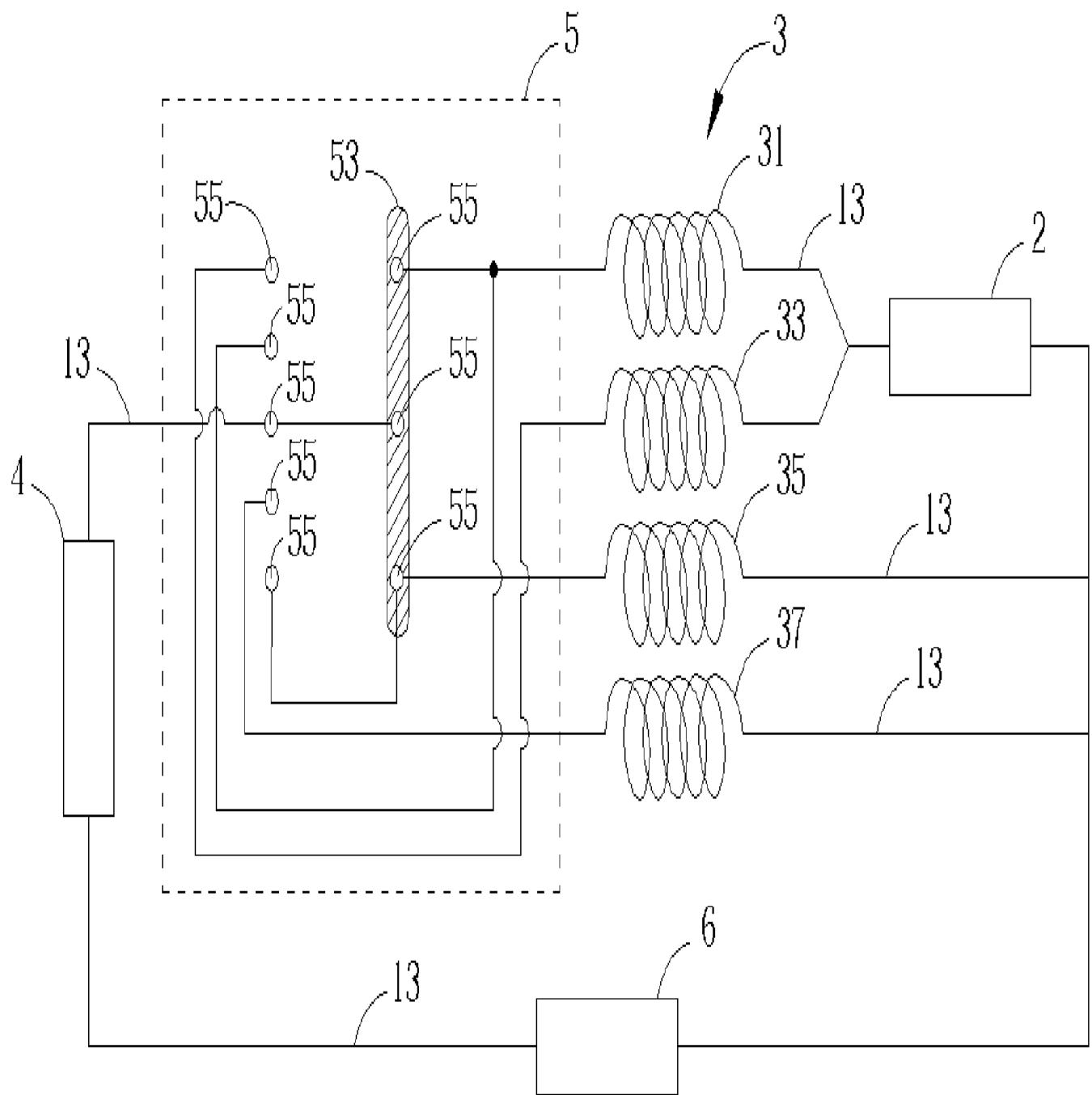


Fig. 7

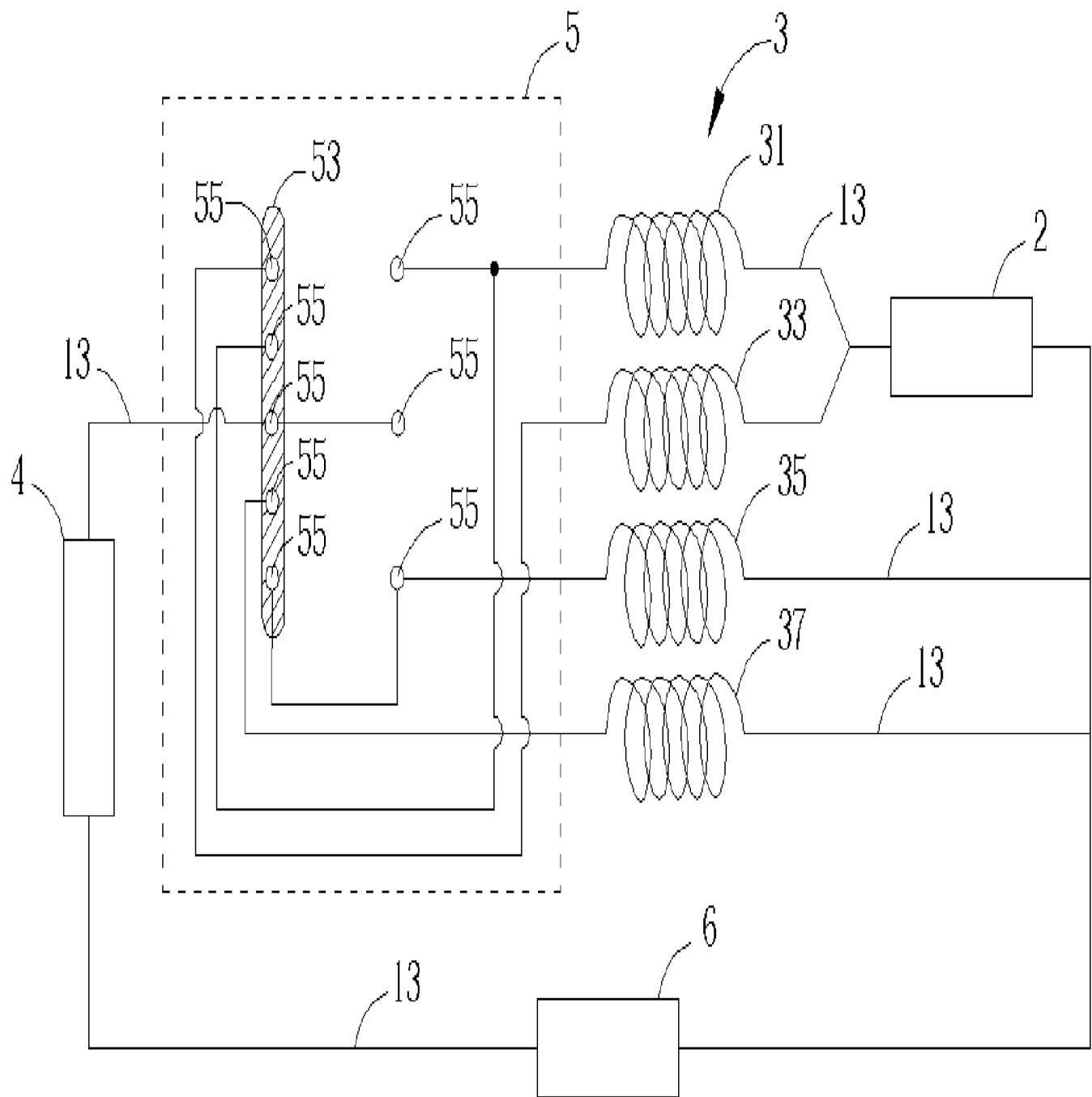


Fig. 8

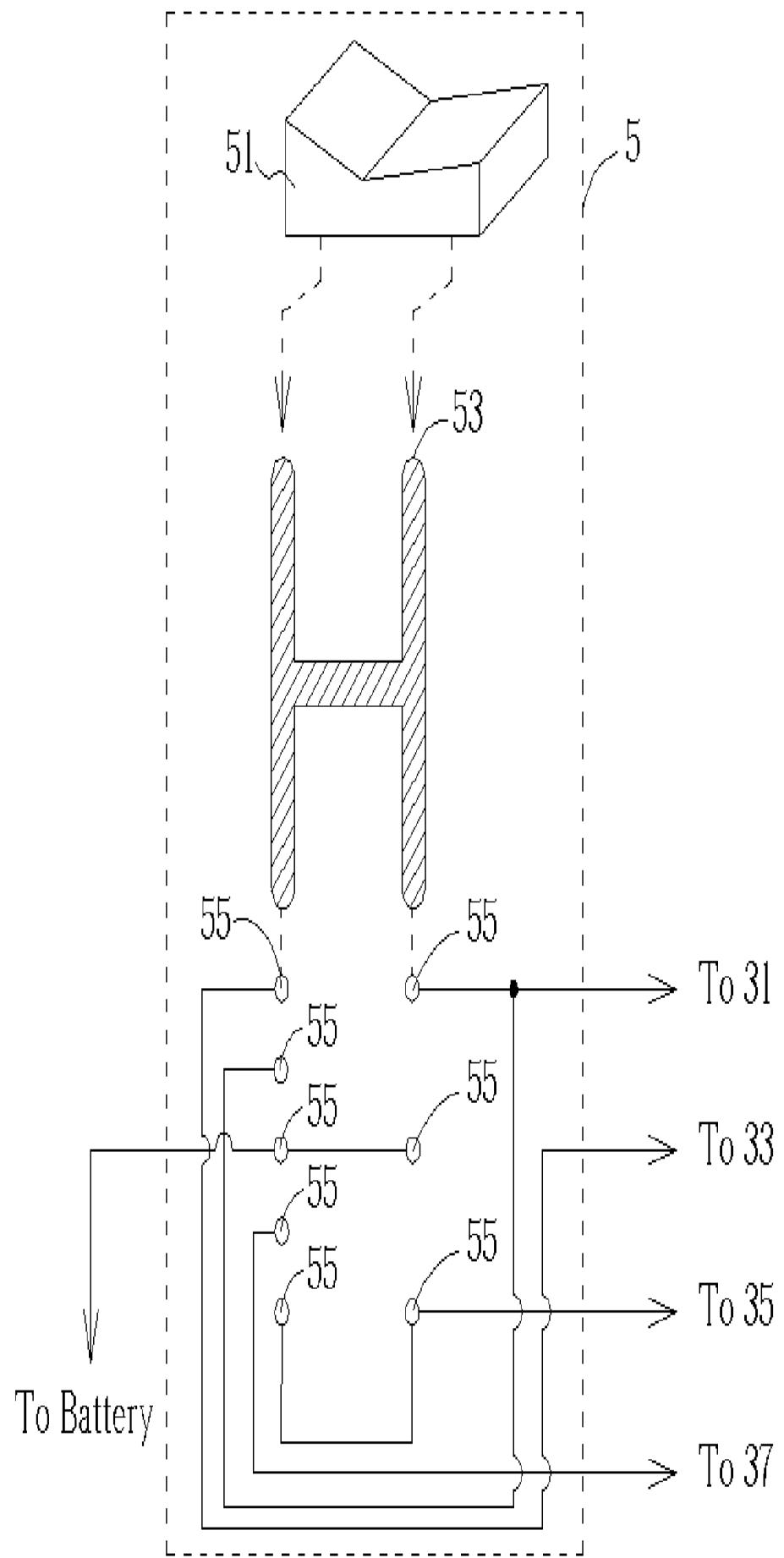


Fig. 9

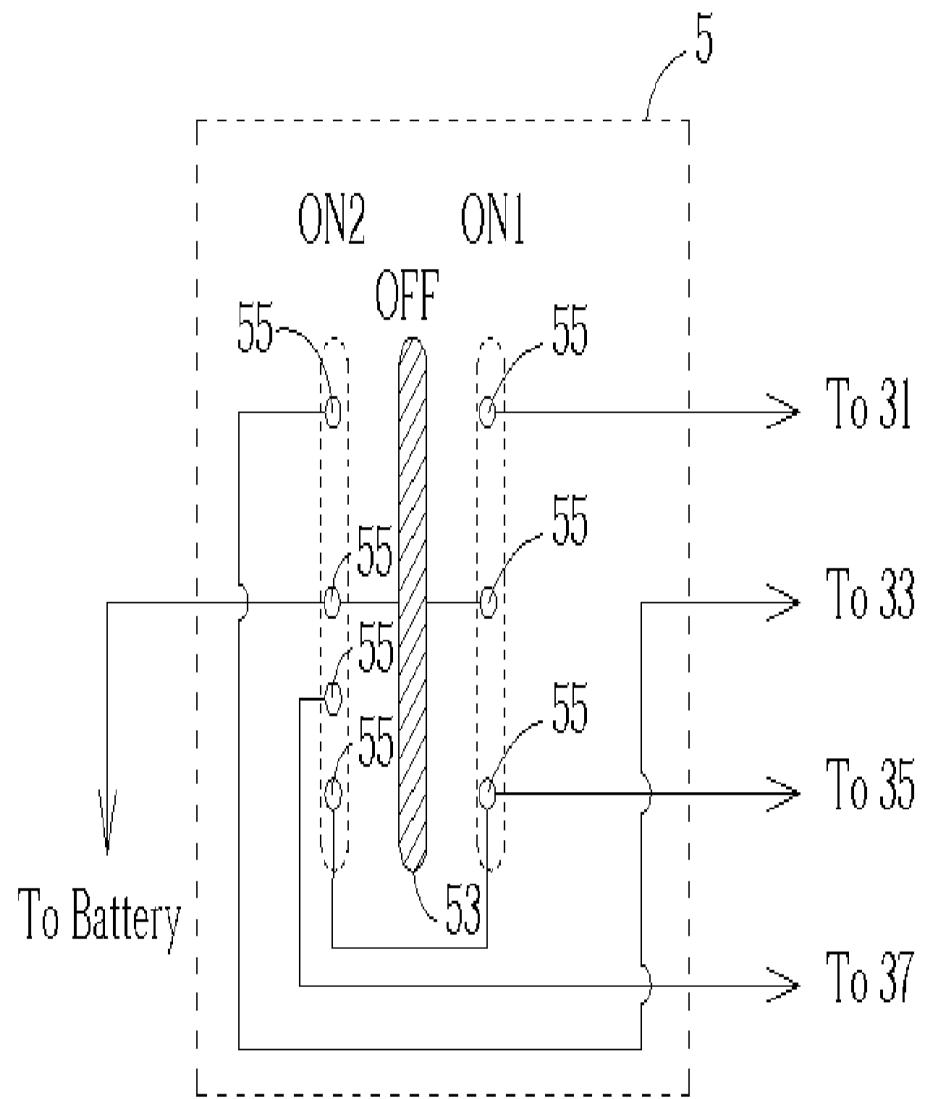


Fig. 10

Type II

| (II -1)        | R <sub>M</sub> | R <sub>1</sub> | R <sub>3</sub> | Total  |
|----------------|----------------|----------------|----------------|--------|
| Resistance Ω = | 4.00           | 4.00           | 1.00           | 0.89   |
| Current DC I = | 2.00           | 2.00           | 16.00          | 18.00  |
| Voltage DC V = | 8.00           | 8.00           | 16.00          | 16.00  |
| Power DC W =   | 16.00          | 16.00          | 256.00         | 288.00 |

| (II -2)         | R <sub>M</sub> | R <sub>2</sub> | R <sub>3</sub> | R <sub>4</sub> | Total  |
|-----------------|----------------|----------------|----------------|----------------|--------|
| Resistance Ω' = | 4.00           | 1.67           | 1.00           | 1.00           | 0.46   |
| Current DC I' = | 2.82           | 2.82           | 16.00          | 16.00          | 34.82  |
| Voltage DC V' = | 11.29          | 4.71           | 16.00          | 16.00          | 16.00  |
| Power DC W' =   | 32.00          | 13.28          | 256.00         | 256.00         | 557.28 |

$$W'_M / W_M = 32.00 / 16.00 = 2$$

$$W'_{\text{Total}} / W_{\text{Total}} = 557.28 / 288.00 = 1.94$$

Fig. 11

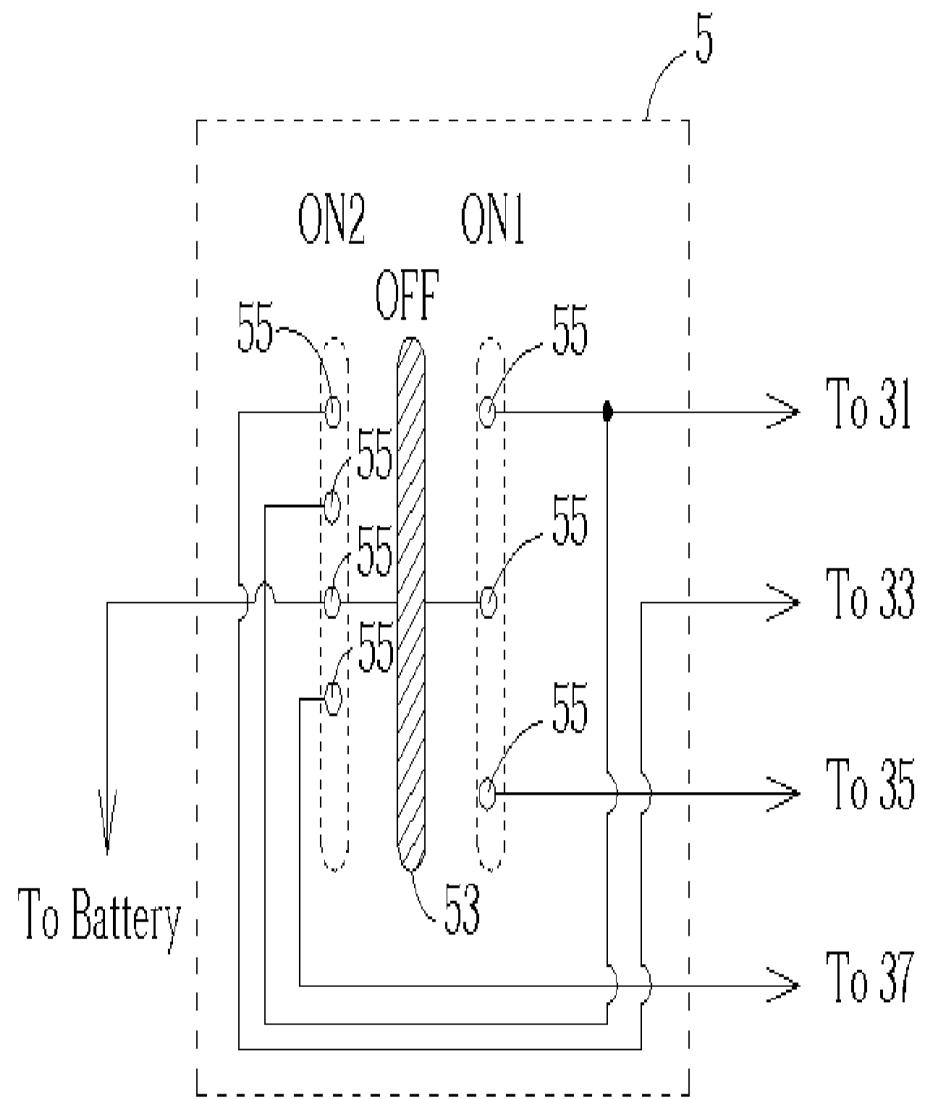


Fig. 12

Type III

| (III-1)        | R <sub>M</sub> | R <sub>1</sub> | R <sub>3</sub> | Total  |
|----------------|----------------|----------------|----------------|--------|
| Resistance Ω = | 4.00           | 4.00           | 1.00           | 0.89   |
| Current DC I = | 2.00           | 2.00           | 16.00          | 18.00  |
| Voltage DC V = | 8.00           | 8.00           | 16.00          | 16.00  |
| Power DC W =   | 16.00          | 16.00          | 256.00         | 288.00 |

| (III-2)         | R <sub>M</sub> | R <sub>1</sub> | R <sub>2</sub> | R <sub>4</sub> | Total  |
|-----------------|----------------|----------------|----------------|----------------|--------|
| Resistance Ω' = | 4.00           | 4.00           | 2.86           | 0.50           | 0.46   |
| Current DC I' = | 2.82           | 1.18           | 1.64           | 32.00          | 34.82  |
| Voltage DC V' = | 11.29          | 4.71           | 4.71           | 16.00          | 16.00  |
| Power DC W' =   | 32.00          | 5.55           | 7.76           | 512.00         | 557.31 |

$$W'_M / W_M = 32.00 / 16.00 = 2$$

$$W'_{\text{Total}} / W_{\text{Total}} = 557.31 / 288.00 = 1.94$$

Fig. 13

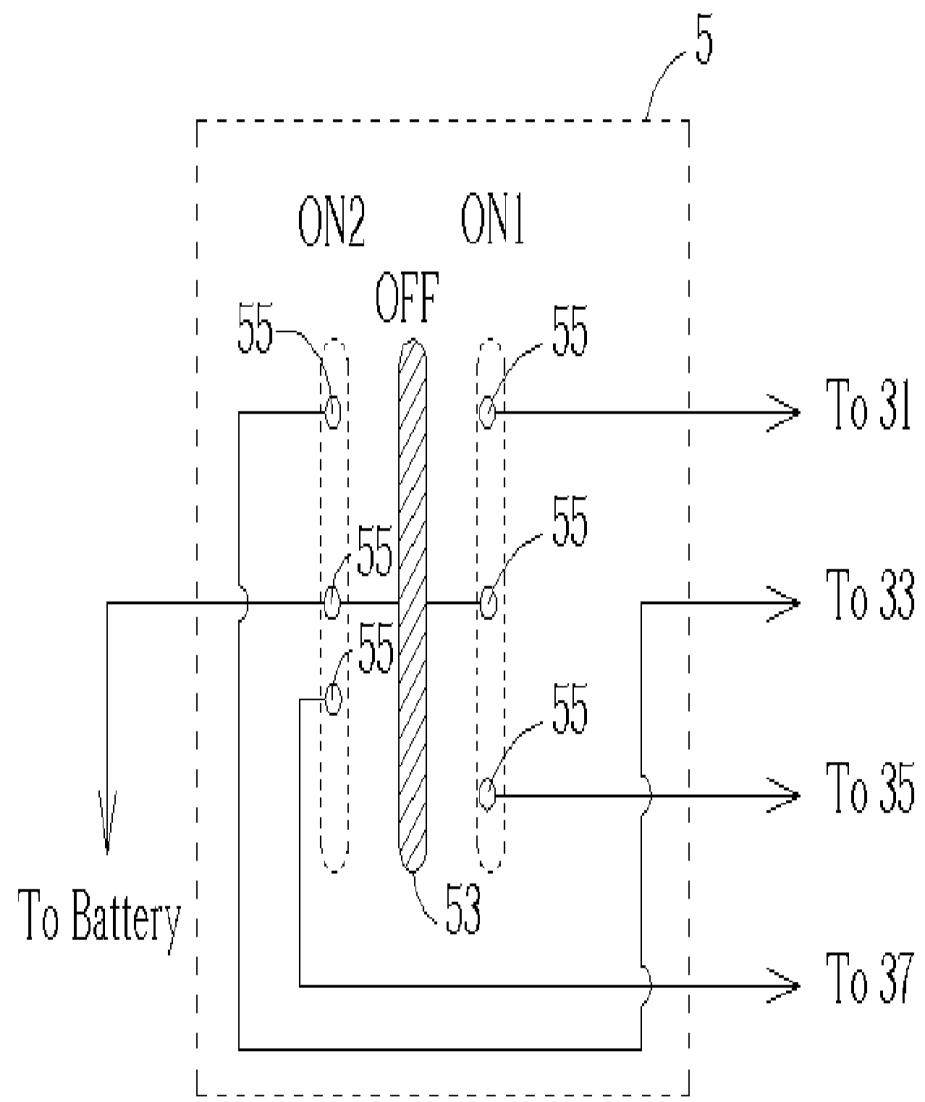


Fig. 14

Type IV

| (IV-1)         | R <sub>M</sub> | R <sub>1</sub> | R <sub>3</sub> | Total  |
|----------------|----------------|----------------|----------------|--------|
| Resistance Ω = | 4.00           | 4.00           | 1.00           | 0.89   |
| Current DC I = | 2.00           | 2.00           | 16.00          | 18.00  |
| Voltage DC V = | 8.00           | 8.00           | 16.00          | 16.00  |
| Power DC W =   | 16.00          | 16.00          | 256.00         | 288.00 |

| (IV-2)          | R <sub>M</sub> | R <sub>2</sub> | R <sub>4</sub> | Total  |
|-----------------|----------------|----------------|----------------|--------|
| Resistance Ω' = | 4.00           | 1.67           | 0.50           | 0.46   |
| Current DC I' = | 2.82           | 2.82           | 32.00          | 34.82  |
| Voltage DC V' = | 11.29          | 4.71           | 16.00          | 16.00  |
| Power DC W' =   | 32.00          | 13.28          | 512.00         | 557.28 |

$$W'_M / W_M = 32.00 / 16.00 = 2$$

$$W'_{\text{Total}} / W_{\text{Total}} = 557.28 / 288.00 = 1.94$$

Fig. 15